(4) REMARKS

RESPONSE TO REJECTIONS UNDER SEC. 103

Pending claims 1-3 and 5-7 are rejected under 35 U.S.C. Sec. 103 as obvious under newly cited U.S. Pat. No. 6,324,565, hereinafter Holt, in view of a reference, U.S. Pat. No. 6,377,991, hereinafter Smith. Claim 4 is rejected under the combination of Holt, Smith and U.S. Pat. No. 6,012,126, hereinafter, Aggarwal.

Holt claim a system of maintaining content consistency between a content server and a proxy server, and a mechanism for notifying all 'subscribed' proxy servers when a content file is updated. However, there are numerous limitations to the design of Holt that make it infeasible (or at least undesirable) for use on the World Wide Web. The present invention was specifically designed to address these limitations and thus distinguishes itself from a combination comprising Holt and Smith.

First, Holt allow any and all capable proxies to 'subscribe' to the content server. This may not be a scalable solution for the World Wide Web, which can have millions of legitimate proxies and hundreds of thousands of object per server. This flaw could be exploited by malicious people to cause the consistency manager to fail. When the consistency manager fails, the legitimate subscribed proxies will not be alerted of any changes to the data. As a result, these legitimate proxies, which are supposed to act as authoritative representatives of the content server, could serve stale content (i.e., content that is no longer current) for an indefinite period of time.

In claim 1 of the present application, there is provided a distinctly different concept: "...a subscription manager in the content server for specifying all of the proxy servers that are subscribed to a content file stored in the content server; ...".

The present inv ntion includes the notion of a type of "lease." Leas s help in two ways. First, they improve the scalability of the design, as it permits the consistency manager to remov states for old subscriptions, thus freeing up state that can be reused for new subscription requests (for different content, or from different proxies). In other words, Holt define no method for cancelling old subscriptions, so they would have to keep all subscriptions ever made (unless the various objects are updated). This is obviously not a scalable solution. Second, leases minimize the length of time that a subscribed proxy could inadvertently serve stale content, in the event the consistency manager fails. This is important as the subscribed proxies are acting as authoritative representatives of the content server.

As noted by the Office, Holt do not even include a subscription mechanism. Holt simply 'subscribe' all documents requested by capable documents. In addition to the scalability problem, with this approach the proxies must assume that the consistency manager will notify them of any changes to the content they've subscribed to. With the Holt invention, the consistency manager has no means for informing a proxy that it (the manager) has decided not to subscribe the proxy, and that the proxy must not rely on invalidation notifications for determining if an object is current. On the other hand, the present invention has a subscription mechanism that enables the consistency manager to inform the proxy whether or not the proxy has a subscription for a particular document, so that the proxy can handle consistency correctly.

However, the Office also claims that the method of Smith provides a subscription mechanism that could be used by Holt While this may be possible, it would not provide the functionality of our invention. Smith describes CARP, the Cache Array Routing Protocol. CARP is intended for use in a single organization that has multiple proxy cache servers (Col 2, lines 34-39). In such an environment, it is assumed that local area networks (LAN) are used (within the organization), so the bandwidth is high, the latency is low, and the financial cost is also low. In such a scenario, it is beneficial to treat all N physical proxy cache servers as a single large logical proxy cache (Col 1, line 12-15). By configuring the caches in this fashion, the number of requests that must be resolved by the content server, which is typically located across a Wide Area Network (WAN), will be minimized (WAN links are usually lower bandwidth, higher latency,

problems. First, the consistency manager would have to send invalidation messages to at least one proxy every time an object changed, as it r tains no state on which proxies actually have a cached copy of the object. If the CARP membership algorithm were used as a subscription mechanism, it would always indicate that at least one proxy should be contacted when an object update occurs (even though that proxy may never have cached that file). Second, because CARP does not guarantee that no object will ever be duplicated in the logical cache, they would have to send invalidation messages to all proxies on every object modification in order to ensure that all stale data is removed from the logical cache.

These concepts are different from the present invention which in claim 1 provides for: "...a consistency manager also in the content server for notifying all of so subscribed proxy servers that cache the content file when the content file is updated in the content server to discard the cached content file from those proxy servers."

While the present application does not specify the mechanism to be used for determining if an object is popular, it may be important for the proxy to identify locally popular objects, and inform the content server of this (via a subscription request), so that the consistency mechanism remains scalable. One would not want a proxy to subscribe to every object that is requested, as most objects are quite unpopular. Subscribing to all documents would limit the scalability of the consistency mechanism. Most of the benefit of caching occurs from storing only a small percentage of the unique objects. Any method that can properly identify the most popular documents, including Aggarwal , might be adapted for use with the present invention. The present application describes what actions to take when a popular file has been identified.

Aggarwal is cited against a dependent claim. A dependent claim includes all the limitations of the claim from which it depends and, as such, makes specific that which was general. 35 U.S.C. 112; 37 C.F.R. Sec. 1.75(c); Allen Group, Inc. V. Nu-Star, Inc., 197 USPQ 849 (7th Cir. 1978); Ex parte Hansen, 99 USPQ 319 (Pat. Off. Bd. App. 1953). Dependent claims are non-obvious if the independent claims from which they depend are non-obvious. In re Fine, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988); *see also* Hartness International, Inc. V. Simplimatic

Engineering Co., 2 USPQ2d 1826, 1831 (Fed. Cir. (1987) to the same eff ct r novelty). Thus, allowance of a base claim as patentable normally results in allowance of a claim dependent upon that claim.

The only possible conclusion is that the combination proposed does not teach, disclose, suggest, or motivate the present invention. A person skilled in the art could not achieve the present invention based solely on the cited references.

It is respectfully requested that all the rejections be withdrawn.

LEGAL ARGUMENT RESPONSE

The undersigned is informed and believes that this is the fifth Action. Previously cited Inohara and DeSimone have apparently be retracted. The Office accepts, at least tacitly, applicants' prior submitted arguments submitted by the undersigned against previously cited Krishnan (see second Office Action), mailed Feb. 18, 2003, and applicants' arguments against previously cited Heddaya (see third Office Action), mailed June 12, 2003. In the fourth Action, the Office cites two new references, Sitaraman and Chen. In the present Action, the Office cites three new references, Holt, Smith, and Aggarwal.

The law is clear. Hindsight reasoning using the invention for which a patent is sought as a template is impermissible. Texas Instruments, Inc. v. ITC, 26 USPQ2d 1018 (CA FC 1993).

It would appear from this file wrapper history that the Office is in fact not keeping to the spirit of Texas Instruments. Each Action evidences a progressive seeking of new references based on the present invention and attempting to force fit similar language of references into applicants' mold based on the application and the prior arguments. This alone is hindsight. Moreover, the very practice of structuring grounds for rejection by repeating applicants' claim language and then sticking column and line citations of a reference therein is *de facto* use of the application as a "template."

It is respectfully requested that all the rejections be withdrawn on this ground.

SUMMARY AND CONCLUSION

Based upon the foregoing, it is submitted that the application now presents claims which are directed to novel, unobvious and distinct features of the present invention which are an advancement to the state of the art. Reconsideration and allowance of all claims is respectfully requested. The right is expressly reserved to reassert any and all arguments, including the raising of new arguments, should a Notice of Allowance not be forthcoming.

Questions or suggestions that will advance the case to allowance may be directed to the undersigned by teleconference at the Examiner's convenience.

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Respectfully submitted,
Hewlett-Packard Company

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